ABSTRAK

Buah sukun mempunyai kadar karbohidrat yang cukup tinggi, sehingga dapat diekstrak senyawa patinya untuk bahan dasar bioplastik. Kitosan ditambahkan untuk memperbaiki sifat bioplastik yang dihasilkan. Tujuan penelitian ini adalah untuk mengetahui pengaruh penambahan *plasticizer* sorbitol terhadap sifat fisik dan mekanik bioplastik dari komposit pati sukun dan kitosan yang dihasilkan serta mengetahui penurunan berat bioplastik pada uji biodegradasi. Bioplastik dari pati sukun dan kitosan dibuat dengan penambahan *plasticizer* sorbitol dengan 4 variasi konsentrasi yaitu 0%, 30%, 45%, dan 60% b/b pati untuk memperbaiki sifat fisik dan mekaniknya. Hasil penelitian menunjukkan bahwa bioplastik terbaik yaitu pada konsentrasi sorbitol 30% dengan nilai ketebalan 0,1490 mm, daya serap air 25,6311%, kadar air 19,5077%, laju transmisi uap air 1,6560 g/m^2 jam, kelarutan dalam air 26,2687%, kuat tarik 22,1253 MPa, dan elongasi 12,1907%. Uji biodegradasi dilakukan dengan mengubur bioplastik dalam wadah berisi tanah dengan waktu penguburan 10 hari. Persentase penurunan bioplastik rata-rata setelah uji biodegradasi hari ke-10 yaitu 78,3823%.

Kata kunci: bioplastik, buah sukun, kitosan, pati, sorbitol

ABSTRACK

Breadfruit have a high enough carbohydrate content which the starch compound can be extracted as the basic materials of bioplastics. Chitosan was added to improve the properties of the bioplastic produced. This research's purpose was to know the effect of sorbitol plasticizer additon toward the physical and mechanical properties of bioplastics from composite starch of breadfruit and chitosan and to know the percentage it weight loss using degradation test. Bioplastics was made from breadfruit strach and chitosan with addition sorbitol as plasticizer in four variation concentrates 0%, 30%, 45%, and 60% w/w starch to repair physical and mechanical properties. The mechanic showed that the best bioplastics was sorbitol concentration 30% had a thickness 0.1490 mm, water resistance 25.6311%, water content of bioplastics 19.5077%, WVTR 1.6560 g/m^2.hours, solubility in water 26.2687%, tensile strength 22.1253 MPa, and elongation 12.1907%. Biodegradation test was done by stockpiling the bioplastik in a soil-filled container during 10-day hoarding time. The average percentage of bioplastik's weight loss after relegated process test on the 10-day was 78.3823%.

Keywords: *bioplastics, breadfruit, chitosan, starch, sorbitol*